Greatest Common Factor, Lowest Common Multiple
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To find Greatest Common Factor and Lowest Common Multiple of 80 and 150:

Factor Lists				Prime Factorization	
150		**80**		150	80

Factor Lists:

150: 1 | 150, 2 | 75, 3 | 50, 5 | 30, 6 | 25, 10 | 15

80: 1 | 80, 2 | 40, 4 | 20, 5 | 16, 8 | 10

Greatest **C**ommon **F**actor: 10

Prime Factorization:

150: 15, 10 → 3 5 2 5 → $2•3•5^2$

80: 8, 10 → 2 2 2   2 5 → $2^4•5$

Greatest **C**ommon **F**actor: 2•5

III. Introducing the "divides" bar.

The statement " 6│18 " means "6 divides into 18 without remainder."

To find GCF, a smaller number, write the given numbers on the right of the "divides" bars. The number in the blank must be the biggest collection of factors that will divide into both prime factorizations.	$\_\_\_\_$ $\begin{vmatrix} 2•3•5^2 \\ 2^4 • 5 \end{vmatrix}$ $\_\_\_\_$	To find LCM, a larger number, write the given numbers on the left of the "divides" bar. The number in the blank must be the smallest collection of factors that can be divided by both prime factorizations.

Algebra example: Find GCF (think smaller) and LCM (think larger) for these expressions:

$$8a^3xz^2 \qquad 12a^2bx^2z^2$$

$$_____ \begin{vmatrix} 8a^3xz^2 \\ 12a^2bx^2z^2 \end{vmatrix} _____$$